

CLAIMS

1. A communication processing device comprising:  
a communication unit for performing data communication  
5 with an external device;  
a control unit, for searching communicable access  
points, generating communication settings information for  
each searched access point as pico-cell information,  
performing communication information acquisition processing  
10 for generating a mapping table which stores available  
address information which is set in said pico-cell  
information corresponding to a communication protocol  
applicable to communication as to each access point, setting  
an address conforming to the communication protocol based on  
15 said mapping table, and executing communication preparatory  
processing for performing communication status setting  
processing based on said pico-cell information; and  
a memory unit for storing said mapping table and said  
pico-cell information.

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2. A communication processing device according to Claim 1,  
wherein said communication processing device has a  
configuration wherein parallel communication processing is  
performed as to different access points to which different  
25 communication protocols are applied, or different connection

resources via the different access points, by parallel processing to which a plurality of different network protocol stacks in said control unit are applied.

5       3. A communication processing device according to Claim 1, wherein said control unit has a configuration wherein a small-scale network is set such that said device itself is a master and one or more communicable access points are slaves, and resource information collection processing regarding a 10 resource connected by cable to the access point from one or more communicable access points set as slaves is performed, and processing to enter the collected resource information to said mapping table is executed.

15       4. A communication processing device according to Claim 1, wherein said communication processing device performs wireless communication with Bluetooth communication; and wherein said control unit executes processing for searching one or more communicable access points with 20 inquiry packet transmission using broadcasting, setting a pico-net wherein an access point which transmits a response packet for a broadcast packet is a slave, performing service search processing using SDP (Service Discovery Protocol) as to one or more communicable access points set as slaves, and 25 registering obtained resource information to said mapping

table based on the service search processing.

5. A communication processing device according to Claim 1,  
wherein said mapping table is a table which stores  
5 information for performing communication processing  
conforming to each communication protocol as a directory  
configuration, and includes an address information data file  
which stores address information required for communication  
to which each communication protocol is applied, and a  
10 resource information file which stores accessible resource  
information based on communication conforming to each  
communication protocol;

and wherein said control unit has a configuration  
wherein address and resource information is obtained from  
15 said mapping table, and processing to generate and send a  
data processing request packet in which a resource address  
is set as a destination address is performed based on the  
obtained resource information.

20 6. A communication processing device according to Claim 1,  
wherein communication status setting processing based on  
said pico-cell information processed by said control unit  
includes synchronization processing in a physical layer  
comprising a communication unit.

7. A communication processing device according to Claim 1,  
wherein said control unit has a configuration wherein search  
processing for communicable access points is performed as  
transmission processing for a broadcast packet, and  
5 generating and updating processing for said pico-cell  
information is performed based on response transmission for  
the broadcast packet.

8. A communication processing device according to Claim 1,  
10 wherein said control unit has a configuration wherein  
information including commands information applicable to  
resource address information and resources, as resource  
information regarding a resource connected by cable to an  
access point from one or more communicable access points is  
15 collected, and processing to enter the collected information  
to said mapping table is executed.

9. A communication processing method for performing data  
communication as to an external device comprising:  
20 a search step for searching communicable access points;  
a pico-cell information generating step for generating  
communication settings information for each searched access  
point as pico-cell information;  
a mapping table generating step for generating a  
25 mapping table to which available address information

conforming to a communication protocol applicable to communication as to each access point set in said pico-cell information is stored; and

5 a communication preparatory step for setting an address conforming to a communication protocol based on said mapping table, and performing communication status setting processing based on said pico-cell information.

10. A communication processing method according to Claim 10, wherein said communication processing method further includes a step for performing parallel communication processing which covers different access points to which different communication protocols are applied, and different connection resources via the different access points, by 15 parallel processing to which a plurality of different network protocol stacks are applied.

11. A communication processing method according to Claim 9, wherein said communication processing method further 20 includes a step for setting a small-scale network wherein said device itself is a master and one or more communicable access points are slaves, and performing resource information collection processing regarding resources connected by cable to the access point from one or more 25 communicable access points set as slaves, and performing

processing to register the collected resource information to said mapping table.

12. A communication processing method according to Claim 5, wherein wireless communication is carried out using Bluetooth communication, and said search step is a step wherein one or more communicable access points with inquiry packet transmission using broadcasting is searched, and a pico-net wherein the access points which transmit a response 10 packet as to a broadcast packet are slaves is set;

further comprising a step for performing service search processing using SDP (Service Discovery Protocol) as to one or more communicable access points set as slaves, and performing processing to enter resource information obtained 15 based on the service search processing to said mapping table.

13. A communication processing method according to Claim 9, wherein said mapping table is a table which stores information for performing communication processing 20 conformed to each communication protocol as a directory configuration, and includes an address information data file which stores address information required for communication to which each communication protocol is applied, and a resource information file which stores accessible resource 25 information based on communication conforming to each

communication protocol;

and wherein said communication processing method includes a step which obtains address information and resource information from said mapping table, and generates 5 and transmits data processing request packet on which a resource address is set as a destination address based on the obtained resource information.

14. A communication processing method according to Claim 10 9, wherein communication status setting processing based on said pico-cell information includes synchronization processing in a physical layer comprising a communication unit.

15 15. A communication processing method according to Claim 9, wherein said search step performs transmission processing for a broadcast packet, and said pico-cell information generating step performs processing based on response transmission for the broadcast packet.

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16. A communication processing method according to Claim 9, wherein said mapping table generating step unit includes processing wherein information including commands information applicable to resource address information and 25 resources, is collected as resource information regarding

resources connected by cable to an access point from one or more communicable access points, and the collected information is registered to said mapping table.

5        17. A computer program written for executing communication processing to perform data communication on a computer system as to an external device, said program comprising:

          a search step for searching communicable access points;  
10        a pico-cell information generating step for generating communication settings information for each searched access point as pico-cell information;  
          a mapping table generating step for generating a mapping table which stores available address information  
15        conforming to communication protocol applicable to communication as to each access point set in said pico-cell information; and  
          a communication preparatory step for setting an address conforming to a communication protocol based on said mapping  
20        table, and performing communication status setting processing based on said pico-cell information.